AMENDMENTS TO THE CLAIMS:

The following listing of claims replaces all prior listings, and all prior versions, of claims in the application.

LISTING OF CLAIMS:

1. (currently amended) A perpendicular magnetic recording medium comprising a soft magnetic underlayer and a perpendicular recording layer which are deposited in this order over a substrate,

said soft magnetic underlayer consisting of a first soft magnetic layer, a domain control layer ~~which includes at least~~ consisting of an anti-ferromagnetic layer, and a second soft magnetic layer in this order from said substrate,

wherein the energy of the exchange bias field Hex2 which is applied to said second soft magnetic layer is larger than the energy of the exchange bias field Hex1 which is applied to said first soft magnetic layer, and

wherein, in a magnetization curve of said soft magnetic underlayer, measured when a magnetic field is applied in a radial direction of the substrate, a magnetization reversal slope occurs at a shift toward a positive direction of energy of the magnetic field and coercivity Hc of the soft magnetic underlayer, which is obtained from the magnetization curve, is smaller than the energy of the exchange bias field (which corresponds to the shift quantity) Hex.

2. (previously presented) The perpendicular magnetic recording medium as recited in claim 1, wherein a ratio of said first soft magnetic layer thickness d1 to said second soft magnetic layer thickness d2, d1/d2, falls within a range of 0.3 to 1.5.

3. (original) The perpendicular magnetic recording medium as recited in

claim 1, wherein said anti-ferromagnetic layer thickness is between 5 nm and 40 nm.

4. (original) The perpendicular magnetic recording medium as recited in claim 1, wherein at least one of said first soft magnetic layer and said second soft magnetic layer is made of a crystalline material.

5. (original) The perpendicular magnetic recording medium as recited in claim 4, ~~wherein said domain control layer includes one or two ferromagnetic layers and said two ferromagnetic layers are formed between said anti-ferromagnetic layer and the first soft magnetic layer and between said anti-ferromagnetic layer and the second soft magnetic layer or said one~~ further consisting of a ferromagnetic layer ~~is~~ formed between and directly adjacent said anti-ferromagnetic layer and the first soft magnetic layer, or between and directly adjacent the anti-ferromagnetic layer and the second soft magnetic layer.

6. (previously presented) The perpendicular magnetic recording medium as recited in claim 1, wherein said first soft magnetic layer is made of an amorphous material.

7. (original) The perpendicular magnetic recording medium as recited in claim 6, ~~wherein said domain control layer includes~~ further consisting of a soft magnetic seed layer for controlling the orientation of magnetization of said anti-ferromagnetic layer and said soft magnetic seed layer ~~is~~ being formed between and directly adjacent said first soft magnetic layer made of the amorphous material and said anti-ferromagnetic layer.

8. (original) The perpendicular magnetic recording medium as recited in claim 6, ~~wherein said domain control layer includes one or two ferromagnetic layers and said two ferromagnetic layers are formed between said anti-ferromagnetic layer and the first soft magnetic layer and between said anti-ferromagnetic layer and the second soft magnetic layer or said one~~ further consisting of ferromagnetic layer ~~is~~ formed between and directly adjacent said anti-ferromagnetic layer and the first soft magnetic layer, or between and directly adjacent the anti-ferromagnetic layer and the second soft magnetic layer.

9. (original) The perpendicular magnetic recording medium as recited in claim 1, wherein both the first soft magnetic layer thickness d1 and the second soft magnetic layer thickness d2 are between 25 nm and 150 nm.

10. (currently amended) A perpendicular magnetic recording medium comprising a soft magnetic underlayer and a perpendicular recording layer which are deposited in this order over a substrate,

said soft magnetic underlayer ~~consisting of~~ comprising a first soft magnetic layer, a domain control layer which includes at least an anti-ferromagnetic layer, and a second soft magnetic layer in this order from said substrate,

wherein the energy of the exchange bias field Hex2 which is applied to said second magnetic layer is larger than the energy of the exchange bias field Hex1 which is applied to said first soft magnetic layer, and

wherein, in a magnetization curve of said soft magnetic underlayer, measured when a magnetic field is applied in a radial direction of the substrate, a

magnetization reversal slope occurs at a shift toward a positive direction of energy of the magnetic field and coercivity Hc of the soft magnetic underlayer, which is obtained from the magnetization curve, is smaller than the energy of the exchange bias field (which corresponds to the shift quantity) Hex.

wherein said domain control layer further ~~includes one or two ferromagnetic layers and said two ferromagnetic layers are formed between said anti-ferromagnetic layer and the first soft magnetic layer and between said anti ferromagnetic layer and the second soft magnetic layer or said one~~ consists of a ferromagnetic layer ~~is~~ formed between and directly adjacent said anti-ferromagnetic layer and the first soft magnetic layer, or between and directly adjacent the anti-ferromagnetic layer and the second soft magnetic layer.

11. (previously presented) The perpendicular magnetic recording medium as recited in claim 10, wherein a ratio of said first soft magnetic layer thickness d1 to said second soft magnetic layer thickness d2, d1/d2, falls within a range of 0.3 to 1.5.

12. (original) The perpendicular magnetic recording medium as recited in claim 10, wherein both the first soft magnetic layer thickness d1 and the second soft magnetic layer thickness d2 are between 25 nm and 150 nm.

13. (currently amended) A magnetic recording/reproducing apparatus comprising the perpendicular magnetic recording medium recited in any of claims 1 to 12, an actuator for rotating the perpendicular magnetic recording medium in a recording direction, a magnetic head equipped with a read element and a write element, means for relatively moving the magnetic head with respect to said magnetic recording medium, and a read/write channel for inputting signals to said

magnetic head and for recording output signals from the magnetic head, wherein the read element of said magnetic head is composed of a high sensitivity element utilizing a magnetoresistive effect or a tunneling magnetoresistive effect.

14. (new) The perpendicular magnetic recording medium as recited in claim 4, further consisting of two ferromagnetic layers, wherein a first of said two ferromagnetic layers is formed between and directly adjacent said anti-ferromagnetic layer and the first soft magnetic layer, and wherein a second of said two ferromagnetic layers is formed between and directly adjacent said anti-ferromagnetic layer and the second soft magnetic layer.

15. (new) The perpendicular magnetic recording medium as recited in claim 6, further consisting of two ferromagnetic layers, wherein a first of said two ferromagnetic layers is formed between and directly adjacent said anti-ferromagnetic layer and the first soft magnetic layer, and wherein a second of said two ferromagnetic layers is formed between and directly adjacent said anti-ferromagnetic layer and the second soft magnetic layer.

16. (new) A perpendicular magnetic recording medium comprising a soft magnetic underlayer and a perpendicular recording layer which are deposited in this order over a substrate,

said soft magnetic underlayer comprising a first soft magnetic layer, a domain control layer, and a second soft magnetic layer in this order from said substrate,

wherein the energy of the exchange bias field Hex2 which is applied to said second magnetic layer is larger than the energy of the exchange bias field Hex1

which is applied to said first soft magnetic layer, and

wherein, in a magnetization curve of said soft magnetic underlayer, measured when a magnetic field is applied in a radial direction of the substrate, a magnetization reversal slope occurs at a shift toward a positive direction of energy of the magnetic field and coercivity Hc of the soft magnetic underlayer, which is obtained from the magnetization curve, is smaller than the energy of the exchange bias field (which corresponds to the shift quantity) Hex.

wherein said domain control layer consists of a first ferromagnetic layer formed directly adjacent the first soft magnetic layer, an anti-ferromagnetic layer formed directly adjacent the first ferromagnetic layer, and a second ferromagnetic layer formed between and directly adjacent said anti-ferromagnetic layer and the second soft magnetic layer.